1: Int Arch Allergy Appl Immunol 1986;80(4):355-60 Related Articles, Books

Suppression of murine IgE responses with amino acid polymer/allergen conjugates. III. Activity in vitro.

Cook RM, Henderson DC, Wheeler AW, Moran DM.

Conjugates of poly-N-methylglycine (polysarcosine) and grass pollen allergen extracts, which have been previously shown to suppress murine IgE responses, were examined for their ability to modify lymphocyte activity in vitro. Allergen-specific T lymphocytes obtained from Balb/c mice gave a reduced response to syngeneic accessory cells pulsed with conjugates of polysarcosine-allergen compared with the response found using equivalent concentrations of native extract. Pretreatment of accessory cells with either polysarcosine or polysarcosine-allergen conjugates did not impair their subsequent ability to present grass pollen extract to immune T cells. Incubation of allergen-specific spleen cells with polysarcosine-allergen conjugates, but not with polysarcosine or allergen alone, resulted in specific cell-mediated suppression which significantly reduced proliferation in vitro. This activity was sensitive to treatment of cells with anti-T-lymphocyte antisera plus complement. Spleen cells obtained from animals immunised with allergen and taken 21 days after intravenous treatment with polysarcosine-allergen conjugates, a regimen that suppressed IgE antibody production, did not proliferate in the presence of grass pollen extract and failed to suppress a secondary lymphoproliferative response in vitro. Spleen cells obtained from similarly treated animals 3 days after the final polysarcosine-allergen injection responded to pollen extract in culture and, additionally, impaired a secondary response. The results suggest that the reduced IgE response found in animals treated with polysarcosine-allergen conjugates may be due, in part, to the generation of a short-lived antigen-specific T cell suppression.

MeSH Terms:

- Allergens/pharmacology*
- Animal
- Antigen-Presenting Cells/cytology
- Cells, Cultured
- IgE/immunology*

- Immune Tolerance
- Lymphocytes/immunology*
- Male
- Methods
- Mice
- Peptides/pharmacology*
- Sarcosine/pharmacology
- Sarcosine/analogs & derivatives*
- Spleen/cytology

Substances:

- IgE
- polysarcosine
- Sarcosine
- Peptides
- Allergens

PMID: 2426203 [PubMed - indexed for MEDLINE]

1: Mol Immunol 1994 Jan;31(1):31-7 Related Articles, Books

PubMed Services

Glycosylation site of the major allergen from olive tree pollen. Allergenic implications of the carbohydrate moiety.

Batanero E, Villalba M, Rodriguez R.

Departamento de Bioquimica y Biologia Molecular I, Facultad de Quimica, Universidad Complutense, Madrid, Spain.

Related Resources

The electrophoretic analysis of purified Ole e I, the major allergen from Olea europaea pollen, reveals the presence of two main variants, glycosylated (20.0 kDa) and non-glycosylated (18.5 kDa) components. The glycosylated variant has been identified as a concanavalin A-binding glycoprotein. Its carbohydrate moiety has a molecular mass of about 1.3 kDa (5% weight of the glycosylated allergen), based on mass spectrometry analysis. Enzymatic treatment of native Ole e I with the specific glycosidase PNGase F accounts for an oligosaccharide N-linked to the polypeptide chain. This treatment does not sensibly modify the secondary structure of the protein but diminishes the affinity of the allergen for specific IgE antibodies. Tryptic digestion of Ole e I reveals the presence of a single carbohydrate-containing peptide. This peptide was recognized by the sera of hypersensitive individuals. The amino acid sequence of this peptide is Phe-Lys-Leu-Asn-Thr-Val-Asn-Gly-Thr-Thr-Arg, asparagine at the seventh being the carbohydrate attaching site. The obtained data are discussed in terms of the potential role of the sugar moiety in the allergenic activity of Ole e I.

MeSH Terms:

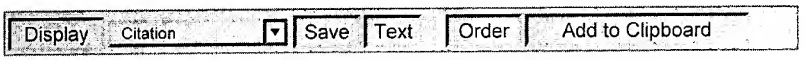
- Allergens/metabolism*
- Allergens/immunology
- Allergens/chemistry
- Amino Acid Sequence
- Carbohydrates/immunology*
- Carbohydrates/chemistry
- Glycosylation
- Human
- IgE/immunology

- Molecular Sequence Data
- Plant Proteins/metabolism*
- Plant Proteins/immunology
- Plant Proteins/chemistry
- Pollen/metabolism*
- Pollen/immunology
- Pollen/chemistry
- Protein Structure, Secondary
- Support, Non-U.S. Gov't
- Trees/immunology*

Substances:

- IgE
- allergen Ole e I
- Plant Proteins
- Carbohydrates
- Allergens

PMID: 8302297 [PubMed - indexed for MEDLINE]



1: Allergy Proc 1995 Sep-Oct;16(5):261-8 Related Articles, Books

PubMed Services

Immunological properties of allergen chemically modified with synthetic copolymer of N-vinylpyrrolidone and maleic anhydride.

Babakhin AA, DuBuske LM, Wheeler AW, Stockinger B, Nolte H, Andreev SM, Gushchin IS, Khaitov RM, Petrov RV.

National Research Center--Institute of Immunology, Moscow, Russia.

Related Resources

Several conjugates of model allergen ovalbumin (OA) and the copolymer of N-vinyl pyrrolidone and maleic anhydride (VMA) modified with epsilon-aminocaproic acid (Acp) were prepared in different OA/Acp-VMA ratios. All conjugates were separated by ultrafiltration and analyzed by HPLC. Their compositions were determined by amino acid analysis and UV spectrometry. To detect immunogenicity, all conjugates were injected intraperitoneally into (CBAxC57BL/6)F1 mice three times in 3-week intervals in OA doses equivalent to 0.5, 10, and 100 micrograms/mouse. Only the conjugate containing 20%OA (OA(20%)-Acp-VMA) did not induce significant quantities of anti-OA IgE, but did induce anti-OA IgG antibodies in dose-dependent manner comparable to that of unmodified OA. Mixtures of OA and Acp-VMA or OA modified only with VMA without Acp activation with Acp induced dose-dependent anti-OA IgE and IgG antibody formation comparable to that of OA. Using passive cutaneous anaphylaxis, RAST inhibition and leukocyte histamine release, a significant reduction of allergenicity was noted using OA(20%)-Acp-VMA. This conjugate stimulated activation of the OA-specific T-cell hybrid 3DO-548 comparable to that of unconjugated OA. During experimental allergen-specific hyposensitization with OA(20%)-Acp-VMA, suppression of anti-OA IgE response and elevation of anti-OA IgG responses were noted when compared with unmodified OA. Selective blockade of B-cell epitopes of allergen may occur using the carrier Acp-VMA to reduce allergenicity while not affecting T-cell epitopes, thereby preserving immunogenicity. This approach of chemical modification of allergen suggests new opportunities in the creation of preparations for allergen-specific immunotherapy.

MeSH Terms:

- 6-Aminocaproic Acid/immunology*
- 6-Aminocaproic Acid/chemistry
- Allergens/immunology*
- Allergens/chemistry
- Animal
- Comparative Study
- Desensitization, Immunologic/methods*
- Drug Evaluation, Preclinical
- Injections, Intraperitoneal
- Male
- Maleic Anhydrides/immunology*
- Maleic Anhydrides/chemistry
- Mice
- Mice, Inbred C57BL
- Mice, Inbred CBA
- Ovalbumin/immunology*
- Ovalbumin/chemistry
- Pyrrolidinones/immunology*
- Pyrrolidinones/chemistry

Substances:

- Ovalbumin
- N-vinyl-2-pyrrolidinone
- 6-Aminocaproic Acid
- Pyrrolidinones
- Maleic Anhydrides
- Allergens

PMID: 8566741 [PubMed - indexed for MEDLINE]

L9 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1993:426595 HCAPLUS
DOCUMENT NUMBER: 119:26595
TITLE: Recombinant Fel d I: expression, purification, **IgE** binding and reaction with cat-allergic human **T cells**
AUTHOR(S): Rogers, Bruce L.; Morgenstern, Jay P.; Garman, Richard D.; Bond, Julian F.; Kuo, Mei Chang
CORPORATE SOURCE: ImmuLogic Pharm. Corp., Waltham, MA, 02154, USA
SOURCE: Mol. Immunol. (**1993**), 30(6), 559-68
CODEN: MOIMD5; ISSN: 0161-5890
DOCUMENT TYPE: Journal
LANGUAGE: English
CLASSIFICATION: 15-9 (Immunochemistry)
ABSTRACT:
This study describes the properties of the two recombinantly expressed polypeptide chains of Fed d I, the major **allergen** produced by the domestic cat (Felis domesticus). An inframe linker encoding polyhistidine has been added to the 5' ends of the Fel d I chains 1 and 2 cDNAs to facilitate purifn. using Ni2+ ion affinity chromatog. This method provides high yields in a single step of rchain 1 and rchain 2 of Fel d I with a >90% level of purity. Polymerase chain reaction (PCR) methods were used to introduce a thrombin cleavage site (LVPR.dwnarw.GS) at the N-terminus of both chains. Thrombin cleavage of rchain 1 and rchain 2 followed by HPLC purifn. of the cleavage products allowed the isolation of each recombinant chain with only two addnl. residuals (GS) at the N-terminus of the native sequence. **Amino** ***acid*** sequencing anal. of the N-terminus and mass spectrometry of these polypeptides demonstrated that they are highly pure and full-length. Direct ELISA assays showed that **IgE** from cat-allergic patients binds to both rchain 1 and rchain 2 of Fel d I, demonstrating that both these chains contribute to the allergenicity of this heterodimeric protein. An examn. of the reactivity of **T cells** derived from cat-allergic patients revealed that both polypeptide chains contribute to the **T** ***cell*** response to this **allergen**. It is concluded that the immunol. response to Fel d I is composed of a reaction at both the B and ***T*** **cell** level to each of the two chains that constitute the native **allergen**.

SUPPL. TERM: cat **allergen** recombinant cloning sequence; **IgE** binding cat **allergen**; **T cell activation** cat **allergen**

INDEX TERM: Protein sequences
(of recombinant **allergen** Fel d 1 chains 1 and 2, of cat)

INDEX TERM: **Allergens**
ROLE: BIOL (Biological study)
(1, Fel d, chains 1 and 2 of, recombinant, expression and **IgE** binding and human **T cells** reactive with)

INDEX TERM: **Immunoglobulins**
ROLE: BIOL (Biological study)
(**E**, recombinant **allergen** Fel d 1 chains 1 and 2 binding to human)

INDEX TERM: Lymphocyte
(**T-cell**, recombinant **allergen** Fel d 1 chains 1 and 2 interaction with, of humans allergic to cats)

L1 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:473729 HCAPLUS
DOCUMENT NUMBER: 127:94502
TITLE: Cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity
INVENTOR(S): Burks, A. Wesley, Jr.; Helm, Ricki M.; Cockrell, Gael; Stanley, J. Steven; **Bannon, Gary A.**
PATENT ASSIGNEE(S): University of Arkansas, USA; Burks, A. Wesley, Jr.; Helm, Ricki M.; Cockrell, Gael; Stanley, J. Steven; Bannon, Gary A.
SOURCE: PCT Int. Appl., 352 pp.
CODEN: PIXXD2
DOCUMENT TYPE: **Patent**
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9724139	A1	19970710	WO 1996-US15222	19960923
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5973121	A	19991026	US 1996-610424	19960304
CA 2241918	AA	19970710	CA 1996-2241918	19960923
AU 9672433	A1	19970728	AU 1996-72433	19960923
AU 729836	B2	20010208		
EP 873135	A1	19981028	EP 1996-933862	19960923
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 11507840	T2	19990713	JP 1996-524311	19960923

PRIORITY APPLN. INFO.:

US 1995-9455	P	19951229
US 1996-610424	A	19960304
US 1992-998377	A2	19921230
US 1993-158704	A1	19931129
WO 1996-US15222	W	19960923

AB Crude Florunner exts. were fractioned by anion-exchange chromatog. using a step gradient. A protein peak which eluted at 10% NaCl and demonstrated intense IgE-binding was further analyzed by 2-dimensional SDS-PAGE/immunoblot anal. The majority of this fraction is a protein which has a mol. wt. of 17 kDa and a pI of 5.2. Sequencing data from the N-terminus revealed the following initial 9 amino acids: (*)-Q-Q-(*)-E-L-Q-D-L. Based on IgE-binding activity and no known amino acid sequence identity to other allergens, this allergen is designated Ara h II. Ara h II may be used to detect and quantify peanut allergens in foodstuffs. Serum IgE from patients with documented peanut hypersensitivity reactions and a peanut cDNA expression library were used to identify clones that encode peanut allergens. One of the major peanut allergens, Ara h I, was selected from these clones using Ara h I-specific oligonucleotides and PCR technol. The cDNA and deduced amino acid sequences are presented for Ara h I (a vicilin-like protein) and Ara h II

(a conglutin-like protein). B-cell epitope mapping and monoclonal antibody prodn. allowed the development of efficient immunoassays, and the allergens can be used for vaccination therapy to treat peanut hypersensitivity in human patients.

=> d iall 7

L4 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:473729 HCAPLUS
DOCUMENT NUMBER: 127:94502
TITLE: Cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity
INVENTOR(S): Burks, A. Wesley, Jr.; Helm, Ricki M.; Cockrell, Gael; Stanley, J. Steven; **Bannon, Gary A.**
PATENT ASSIGNEE(S): University of Arkansas, USA; Burks, A. Wesley, Jr.; Helm, Ricki M.; Cockrell, Gael; Stanley, J. Steven; Bannon, Gary A.
SOURCE: PCT Int. Appl., 352 pp.
CODEN: PIXXD2
DOCUMENT TYPE: **Patent**
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: A61K039-00
SECONDARY: A61K039-35; A61K039-395; C07K014-415; C07K016-00; G01N033-53; G01N033-543
CLASSIFICATION: 17-5 (Food and Feed Chemistry)
Section cross-reference(s): 3, 9, 11, 15
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9724139	A1	19970710	WO 1996-US15222	19960923
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5973121	A	19991026	US 1996-610424	19960304
CA 2241918	AA	19970710	CA 1996-2241918	19960923
AU 9672433	A1	19970728	AU 1996-72433	19960923
AU 729836	B2	20010208		
EP 873135	A1	19981028	EP 1996-933862	19960923
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 11507840	T2	19990713	JP 1996-524311	19960923

PRIORITY APPLN. INFO.:

US 1995-9455	P	19951229
US 1996-610424	A	19960304
US 1992-998377	A2	19921230
US 1993-158704	A1	19931129
WO 1996-US15222	W	19960923

ABSTRACT:
Crude Florunner exts. were fractioned by anion-exchange chromatog. using a step
gradient. A protein peak which eluted at 10% NaCl and demonstrated intense IgE-binding was further analyzed by 2-dimensional SDS-PAGE/immunoblot anal. The majority of this fraction is a protein which has a mol. wt. of 17 kDa and a
pI of 5.2. Sequencing data from the N-terminus revealed the following initial 9 amino acids: (*)-Q-Q-(*)-E-L-Q-D-L. Based on IgE-binding activity and no

known amino acid sequence identity to other allergens, this allergen is designated Ara h II. Ara h II may be used to detect and quantify peanut allergens in foodstuffs. Serum IgE from patients with documented peanut hypersensitivity reactions and a peanut cDNA expression library were used to identify clones that encode peanut allergens. One of the major peanut allergens, Ara h I, was selected from these clones using Ara h I-specific oligonucleotides and PCR technol. The cDNA and deduced amino acid sequences are presented for Ara h I (a vicilin-like protein) and Ara h II (a conglutin-like protein). B-cell epitope mapping and monoclonal antibody prodn.
allowed the development of efficient immunoassays, and the allergens can be used for vaccination therapy to treat peanut hypersensitivity in human patients.

SUPPL. TERM: peanut hypersensitivity allergen sequence immunoassay; cloning peanut allergen; epitope mapping peanut allergen

INDEX TERM: Vicilin
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Ara h I is a vicilin-like protein; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Allergens
ROLE: ADV (Adverse effect, including toxicity); ANT (Analyte); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(Ara h I; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Allergens
ROLE: ADV (Adverse effect, including toxicity); ANT (Analyte); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(Ara h II; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Amino acids, biological studies
ROLE: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(amino acid compn. of Ara h II; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: ELISA (immunosorbent assay)
Epitope mapping
Food allergies
Hypersensitivity
Immunoassay
Peanut (Arachis hypogaea)
Vaccination
(cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Globulins, biological studies
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(conglutins, Ara h II is a vicilin-like protein; cloning, nucleotide and amino acid sequences, and immunoassays of

peanut allergens causing hypersensitivity)

INDEX TERM: Carbohydrates, biological studies
ROLE: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(glycosyl compn. of Ara h II; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Candy
(immunoassay for peanut allergens in; cloning, nucleotide
and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Vegetable oils
ROLE: AMX (Analytical matrix); ANST (Analytical study)
(immunoassay for peanut allergens in; cloning, nucleotide
and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Monoclonal antibodies
ROLE: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassays and vaccination; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: Hybridomas
(monoclonal antibody prodn. for immunoassays and vaccinations; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 191857-17-7 191857-18-8 191857-19-9 191857-20-2
191857-21-3 191857-23-5 191857-25-7 191857-26-8
191857-28-0 191857-29-1 191857-30-4 191857-31-5
191857-33-7 191857-34-8 191857-35-9 191857-36-0
191857-37-1 191857-38-2 191857-39-3 191857-41-7
191857-44-0 191857-48-4 191857-51-9
ROLE: BAC (Biological activity or effector, except adverse); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Ara h I IgE-binding epitope; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 191857-67-7 191857-69-9 191857-70-2
ROLE: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(Ara h I peptide fragment; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 191857-53-1 191857-55-3 191857-58-6 191857-59-7
ROLE: BAC (Biological activity or effector, except adverse); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Ara h II IgE-binding epitope; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 191857-00-8 191857-02-0 191857-04-2 191857-06-4
191857-08-6 191857-09-7 191857-10-0 191857-11-1
191857-12-2 191857-13-3 191857-14-4 191857-15-5

ROLE: BAC (Biological activity or effector, except adverse);
PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Ara h II peptide epitope; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 182238-41-1 182238-42-2 191857-60-0 191857-61-1
191857-63-3 191857-65-5 191941-30-7
ROLE: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(Ara h II peptide fragment; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 191942-47-9
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(PCR primer for Ara h I; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 191942-46-8
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(PCR primer for Ara h II; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 191941-65-8, Allergen Ara h I (peanut clone P41b)
191941-66-9, Allergen Ara h I (peanut clone P17)
191941-67-0
ROLE: ADV (Adverse effect, including toxicity); ANT (Analyte); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(amino acid sequence; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

INDEX TERM: 156709-25-0, GenBank L34402 161844-49-1, GenBank L38853
175007-43-9, GenBank L77197
ROLE: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nucleotide sequence; cloning, nucleotide and amino acid sequences, and immunoassays of peanut allergens causing hypersensitivity)

L12 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:47153 HCAPLUS
DOCUMENT NUMBER: 124:143459
TITLE: Immunological properties of **allergen** chemically **modified** with synthetic copolymer of N-vinylpyrrolidone and maleic anhydride
AUTHOR(S): Babakhin, Alexander A.; DuBuske, Lawrence M.; Wheeler, Alan W.; Stockinger, Brigitta; Nolte, Hendrik; Andreev, Sergey M.; Gushchin, Igor S.; Khaitov, Rakhim M.; Petrov, Rem V.
CORPORATE SOURCE: National Research Center, Institute Immunology, Moscow, Russia
SOURCE: Allergy Proc. (1995), 16(5), 261-8 → Sep 1995
CODEN: ALPRE5; ISSN: 1046-9354
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Several conjugates of model **allergen** ovalbumin (OA) and the copolymer of N-vinyl pyrrolidone and maleic anhydride (VMA) **modified** with epsilon-aminocaproic acid (Acp) were prepd. in different OA/Acp-VMA ratios. All conjugates were sepd. by ultrafiltration and analyzed by HPLC. Their compns. were detd. by **amino acid** anal. and UV spectrometry. To detect immunogenicity, all conjugates were injected i.p. into (CBA .times. C57BL/6)F1 mice three times in 3-wk intervals in OA doses equiv. to 0.5, 10, and 100 .mu.g/mouse. Only the conjugate contg. 20%OA (OA(20%)-Acp-VMA) did not induce significant quantities of anti-OA **IgE**, but did induce anti-OA IgG antibodies in dose-dependent manner comparable to that of unmodified OA. Mixts. of OA and Acp-VMA or OA **modified** only with VMA without Acp **activation** with Acp induced dose-dependent anti-OA **IgE** and IgG antibody formation comparable to that of OA. Using passive cutaneous anaphylaxis, RAST inhibition and leukocyte histamine release, a significant redn. of allergenicity was noted using OA(20%)-Acp-VMA. This conjugate stimulated **activation** of the OA-specific **T-cell** hybrid 3DO-548 comparable to that of unconjugated OA. During exptl. **allergen**-specific hyposensitization with OA(20%)-Acp-VMA, suppression of anti-OA **IgE** response and elevation of anti-OA IgG responses were noted when compared with unmodified OA. Selective blockade of B-cell epitopes of **allergen** may occur using the carrier Acp-VMA to reduce allergenicity while not affecting **T-cell** epitopes, thereby preserving immunogenicity. This approach of chem. **modification** of **allergen** suggests new opportunities in the creation of prepns. for **allergen**-specific immunotherapy.